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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,918

06/26/2003

Fred S. Cook

2182(16166)

5738

33272

7590

03/16/2009

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EXAMINER

FORD, GRANT M

ART UNIT

PAPER NUMBER

2441

MAIL DATE

DELIVERY MODE

03/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/606,918	COOK, FRED S.	
	<b>Examiner</b>	<b>Art Unit</b>	
	GRANT FORD	2441	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 12/2/2008 have been fully considered but they are not persuasive. Applicant argued in substance that –

(A) The prior art of Rawlins fails to disclose a router performing any operations on user-supplied data, nor does Rawlins disclose virtual processing elements having a respective data processing operation and being accessible by a respective network path.

(B) The prior art of Bruck fails to teach the aggregation and allocation of network traffic paths to perform a data processing operation using virtual processing elements.

2. As to point (A), regarding Applicant's arguments directed to the prior art of Rawlins failing to disclose virtual processing elements having a respective data processing operation and being accessible by a respective network path, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The Examiner notes that the prior art of Bruck was relied upon for the Applicant argued limitations, not the cited prior art of Rawlins. As such, Applicant's argument is not found to be persuasive.

Regarding Applicant's argument that the prior art of Rawlins fails to disclose the router performing any operations on user-supplied data, while the prior art of Rawlins was not cited as disclosing any such limitation, the prior art of Rawlins at least discloses packet classification and packet marking with the appropriate DSCP of the aggregate Diffserv class at the router (e.g., Col. 10 lines 35-64). Further, regarding Applicant's argument that "*The router does not perform any operations on user-supplied data (i.e., the data payload within the packet)*", no such claim limitation directed to operating on the data payload within the packet is found in independent claim 1.

3. As to point (B), Applicant argued that prior art of Bruck fails to teach the aggregation and allocation of network traffic paths to perform a data processing operation using virtual processing elements. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The Examiner notes that the prior art of Rawlins was relied upon for the aggregation and allocation argued with respect to the prior art of Bruck. As such, Applicant's argument is not found to be persuasive.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7,10-13,and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rawlins et al. (7,069,337), hereinafter referred to as Rawlins, in view of Bruck et al. (7,299,294), hereinafter referred to as Bruck.

- a. As per claim 1, Rawlins discloses a method comprising the steps of:
  - interconnecting a plurality of physical processing components within said network for providing a plurality of virtual processing elements that are accessible by respective network traffic paths (Col 6 lines 42-64);
  - representing a pool of said virtual processing elements using a resource aggregator, each virtual processing element having a capacity allocable according to a respective communication transfer rate based on a sustainable data flow rate to complete respective data processing transactions (Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34);
  - receiving a reservation request for utilizing specified processing resources (Col 8 line 58 through Col 9 line 7);
  - said resource aggregator exclusively reserving at least one virtual processing element for providing capacity to satisfy said reservation request in response to said respective communication transfer rate (Col 9 line 44 through Col 10 line 34); and
  - allocating use of a respective network traffic path to service said reservation request in response to said identified virtual processing element (Col 9 line

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44 through Col 10 line 34). However, Rawlins fails to explicitly disclose wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data.

Bruck teaches wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data (Abstract, Col 4 lines 16-45, Col 5 line 48 through Col 6 line 20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of virtual processing elements performing data processing operations on user-supplied data with the prior art of Rawlins. One of ordinary skill in the art would have done so for the purpose of providing functions such as a web file server, FTP server, or application server, as well as providing dynamic reconfiguration processing for virtual pools of resources (Col 4 lines 16-45, Col 6 lines 5-20).

b. As per claim 2, Rawlins discloses wherein said plurality of virtual processing elements includes multiple component types for performing respective processing operations (Col 6 lines 56-64, Col 9 lines 44-63, Col 12 lines 46-63).

c. As per claim 3, Rawlins discloses wherein said pool includes composite resource sets combining said respective processing operations to implement a predetermined composite service, each composite resource set being comprised of a plurality of said multiple component types (Figure 6, Col 11 lines 13-54).

d. As per claim 4, Rawlins discloses wherein said respective processing operations within a composite resource set are characterized by predetermined

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interactions for integrating said processing operations into a service function (Col 9 lines 44-63).

e. As per claim 5, Rawlins discloses wherein said processing operations include a data manipulation function and a storage function (Col 10 lines 12-34, Col 12 lines 46 through Col 13 line 16, Col 16 lines 1-32).

f. As per claim 6, Rawlins discloses wherein each of said composite resource sets further comprises at least one transport link within said network for connecting said multiple component types (Figure 3, Col 7 line 44 through Col 8 line 11).

g. As per claim 7, Rawlins discloses wherein said network is comprised of an IP network and wherein said step of allocating use of a respective network traffic path is comprised of sending an IP message in a bandwidth reservation request (Col 8 line 58 through Col 9 line 7).

h. As per claim 10, Rawlins discloses a method comprising:  
a plurality of physical processing components advertising to an aggregator their respective virtual processing components according to a plurality of component types for performing respective processing operations and advertising respective capacities of said virtual processing components, wherein said virtual processing components are addressable within said network as respective virtual network elements (Col 6 lines 42-64, Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34);

said aggregator constructing a plurality of service resource sets from said virtual processing components according to a service type, each service resource set

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comprised of a combination of said virtual network elements (Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34);

said aggregator receiving a reservation request from a remote user for utilizing resources according to said service type (Col 8 line 58 through Col 9 line 7);

said aggregator allocating a selected service resource set for fulfilling said reservation request (Col 9 line 44 through Col 10 line 34); and

said aggregator identifying said selected service resource set to said remote user (Col 3 lines 7-32). However, Rawlins fails to explicitly disclose wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data.

Bruck teaches wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data (Abstract, Col 4 lines 16-45, Col 5 line 48 through Col 6 line 20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of virtual processing elements performing data processing operations on user-supplied data with the prior art of Rawlins. One of ordinary skill in the art would have done so for the purpose of providing functions such as a web file server, FTP server, or application server, as well as providing dynamic reconfiguration processing for virtual pools of resources (Col 4 lines 16-45, Col 6 lines 5-20).



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i. As per claim 11, Rawlins discloses wherein said processing operations include a data manipulation function and a storage function (Col 10 lines 12-34, Col 12 lines 46 through Col 13 line 16, Col 16 lines 1-32).

j. As per claim 12, Rawlins discloses wherein each of said composite resource sets further comprises at least one transport link within said network for connecting said multiple component types (Figure 3, Col 7 line 44 through Col 8 line 11).

k. As per claim 13, Rawlins discloses wherein said network is comprised of an IP network and wherein said step of allocating use of a respective network traffic path is comprised of sending an IP message in a bandwidth reservation request (Col 8 line 58 through Col 9 line 7).

l. As per claim 16, Rawlins discloses an apparatus for providing a data processing service comprising:

a network including a plurality of transport links (Figure 3, Col 7 line 44 through Col 8 line 11);

a plurality of physical processing components connected within said network for advertising a plurality of virtual processing elements that are accessible by respective network traffic paths to perform respective processing operations, each virtual processing element having a capacity allocable according to a respective communication transfer rate based on a sustainable data flow to complete respective data processing transactions (Col 6 lines 42-64, Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34);

a resource aggregator connected within said network for representing a pool of said advertised virtual processing elements, receiving a reservation request for utilizing specified processing resources, exclusively reserving at least one virtual processing element for providing capacity to satisfy said reservation request in response to said respective communication transfer rate, and allocating use of a respective network traffic path to service said reservation request in response to said identified virtual processing element (Col 3 lines 7-32, Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34). However, Rawlins fails to explicitly disclose wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data.

Bruck teaches wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data (Abstract, Col 4 lines 16-45, Col 5 line 48 through Col 6 line 20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of virtual processing elements performing data processing operations on user-supplied data with the prior art of Rawlins. One of ordinary skill in the art would have done so for the purpose of providing functions such as a web file server, FTP server, or application server, as well as providing dynamic reconfiguration processing for virtual pools of resources (Col 4 lines 16-45, Col 6 lines 5-20).

m. As per claim 17, Rawlins discloses an apparatus comprising:

a network including a plurality of transport links (Figure 3, Col 7 line 44 through Col 8 line 11);

a plurality of physical processing components connected within said network for advertising a plurality of virtual processing components according to a plurality of component types for performing respective processing operations and advertising respective capacities of said virtual processing components, wherein said virtual processing components are addressable within said network as respective virtual network elements (Col 6 lines 42-64, Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34); and

and aggregator for constructing a plurality of service resource sets from said virtual processing components according to a service type, each service resource set comprised of a combination of said virtual network elements (Col 8 line 58 through Col 9 line 7, Col 10 lines 12-34), receiving a reservation request from a remote user for utilizing resources according to said service type (Col 8 line 58 through Col 9 line 7), allocating a selected service resource set for fulfilling said reservation request (Col 9 line 44 through Col 10 line 34), and identifying said selected service resource set to said remote user (Col 3 lines 7-32). However, Rawlins fails to explicitly disclose wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data.

Bruck teaches wherein the plurality of virtual processing elements that are accessible by respective network traffic paths perform a respective data processing operation on user-supplied data (Abstract, Col 4 lines 16-45, Col 5 line 48 through Col 6

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line 20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of virtual processing elements performing data processing operations on user-supplied data with the prior art of Rawlins. One of ordinary skill in the art would have done so for the purpose of providing functions such as a web file server, FTP server, or application server, as well as providing dynamic reconfiguration processing for virtual pools of resources (Col 4 lines 16-45, Col 6 lines 5-20).

n. As per claim 18, Rawlins discloses wherein said processing operations include a data manipulation function and a storage function (Col 10 lines 12-34, Col 12 lines 46 through Col 13 line 16, Col 16 lines 1-32).

o. As per claim 19, Rawlins discloses wherein each of said composite resource sets further comprises at least one transport link within said network for connecting said multiple component types (Figure 3, Col 7 line 44 through Col 8 line 11).

p. As per claim 20, Rawlins discloses wherein said network is comprised of an IP network and wherein said step of allocating use of a respective network traffic path is comprised of sending an IP message in a bandwidth reservation request (Col 8 line 58 through Col 9 line 7).

6. Claims 8-9,14-15,and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rawlins and Bruck in view of Wright (7,082,102).

a. As per claims 8,14,and 21, Rawlins and Bruck teach the invention substantially as claimed above. Additionally, Rawlins discloses the use of an IP network (Fig. 4, Col 7 lines 1-11), however Rawlins fails to explicitly disclose the use of label-switched paths.

Wright discloses wherein network traffic paths are comprised of label-switched paths (Col 2 lines 12-19, Col 3 line 34 through Col 4 line 16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of label-switch paths with policy-based service class routing systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing communications across a MPLS environment (Col 2 lines 12-19).

b. As per claims 9,15,and 22, Rawlins and Bruck teach the invention substantially as claimed above. However, Rawlins fails to explicitly teach the use of an ATM network wherein said network traffic paths are comprised of ATM virtual paths.

Wright discloses the use of an ATM network wherein network traffic paths are comprised of label switched paths (Col 3 lines 34-44 and 61-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an ATM network and virtual paths with policy-based service class routing systems. One of ordinary skill in the art would have done so for the purpose of providing legacy network support which is capable of performing label lookup and replacement (Col 3 lines 34-44 and 61-63).

### ***Conclusion***

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**7. The prior art made of record but not relied upon is considered pertinent to the Applicant's disclosure and instant claim language:**

8. **Hakata et al. (*IP Core Transport Network*)**, teaches a virtual router environment utilizing quality of service metrics, MPLS, RSVP-TE, and load-balanced label switched path establishment (e.g., Sections 4.1-4.3).

9. **Brunner et al. (*MPLS Management using Policies*)**, teaches MPLS implementation enabling the setup of label switched paths including the use of RSVP/COPS conversion at an IP router (e.g., Page 517).

10. **Autenrieth et al. (*Resilience-Differentiated QoS – Extensions to RSVP and Diffserv to Signal End-to-End IP Resilience Requirements*)**, teaches end-to-end provisioning of resilience and QoS in an IP-based network employing MPLS and RSVP messaging (e.g., Sections 3-4).

11. **Pellegrino et al. (US 2003/0145045)**, teaches storage aggregation for enhancing virtualization in data storage networks.

12. **Czajkowski et al. (*Grid Information Services for Distributed Resource Sharing*)**, teaches implementation of protocols which allow for incorporation of individual entities into various information structures, such as aggregate directories that

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support a variety of different languages and discovery strategies, wherein the protocols may be combined with other Grid protocols to construct additional high-level services and capabilities such as brokering, monitoring, fault detection, and troubleshooting (e.g., Abstract, Sections 3-4).

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GRANT FORD whose telephone number is (571)272-8630. The examiner can normally be reached on 8-5:30 Mon-Thurs alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew Caldwell/  
Supervisory Patent Examiner, Art  
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